

Custom Part S/O 125341 Ship 03/11

Work Order ID 142283

142283

Page 1

Friday, March 04, 2016 1:45:28 PM

Item ID: D4961-041 Accept *N9000040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Tube Assembly

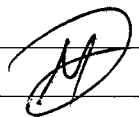
Start Date: 3/8/2016 Start Qty: 1.00 *1*

Required Date: 3/11/2016 Req'd Qty: 1.00 *1*

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan:  Date: 16-34 Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4961	B								

110

0.00

110

Small Fab

Small Fab

Memo

0.01

1-D4961-041 must be made 0.25" shorter than what's shown on our drawing

2- On one side of tube flare end as per dwg then slide sleeves and nuts, flare other side of tube as per dwg.

1 FF MAR 07 2016

120

QC5- Inspect part completeness to step on W/O

0.00

120

QC

Quality Control

Memo

0.00

1 DAS 38 9-89 MAR 07 2016

DQA:

Date: 16.05.13



QA Closed:

Date: 16/04/12

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: <u>142283</u> Part No. <u>D4961-041</u> NCR No. <u>10 57A</u>	DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☒ Quality ☐ Other ☐			
Date: <u>16/3/4</u>	Step #: <u>110</u>	QTY Effective: <u>①</u>		MRB (QSI042) Approval DAS 12 9-89 <u>16/3/4</u>	
Description Work Order Deviation		Disposition			
Customer requires 0.25" shorter piece to allow proper fit.		Acceptable. Deviation to restore intended design.		Completed By DAS 12 9-89 <u>16/3/4</u> Lead hand / Supervisor Approval Verification DAS 9 9-89 <u>16-04-02</u> QC / QA Coordinator Approval DAS 9 9-89 <u>16-04-02</u>	
Root Cause Environment ☐ Design ☒ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
☒ OTHER: <u>customer request</u>					

Work Order ID 142283

Friday, March 04, 2016 1:45:28 PM

142283

Page 2

Item ID: D4961-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tube Assembly

Start Date: 3/8/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/11/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

Identify as per dwg & Stock Location: 85/39

0.00

130

Packaging

Memo

0.00

Packaging

IK 68-92 SVD MAR 07 2016

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MCJ MAR 07 2016MCJ MAR 07 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

Friday, March 04, 2016 1:46:07 PM

Page 1

Work Order ID: 142283

142283

Parent Item: D4961-041

D4961-041

Parent Item Name: Tube Assembly

Start Date: 3/8/2016

Required Date: 3/11/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 13.10.22 NEW ISSUE DD VERF:JFS IPP
REV:B 15.02.18 AS PER DWG REV.B DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN818-L12J		Purchased		No		110	Each	16.0000	2	2			

AN818-L 12.I

Nut

FF

MAR 07 2016

Location	Loc Qty	Loc Code
CCK006	6	
m132803	6	
ST325	10	
m134257	10	

M304TR0.750W.049

Purchased

No

110

f

166.1449

0.7

0.736842

M304TR0 750W 049

304 RD Tube .750 x .049W

FF

MAR 07 2016

Location	Loc Qty	Loc Code
GA002	159.1721322	
M132270	0.00001	
M133131	0.0007242	
M133509	14.210211	
M133700	8.85327	
M133914	17.31816	
M134138	16.504126	
M134212	30.484789	
M134306	71.800842	
MAT	6.9727347	
M133400	6.9727347	

0.736842

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____	Step #: _____	QTY Effective : _____				MRB (QSI042) Approval	
Description Work Order Deviation		Disposition				Completed By	
						Lead hand / Supervisor Approval Verification	
						QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	☐ OTHER : _____	

Picklist Print

Page 2

Friday, March 04, 2016 1:46:07 PM

Work Order ID: 142283

142283

Parent Item: D4961-041

D4961-041

Parent Item Name: Tube Assembly

Start Date: 3/8/2016

Required Date: 3/11/2016

Start Qty: 1.00

Required Qty: 1.00

MS20819-12J

Purchased

No

110

Each

15.0000

2

2

MS20819-12.J

FF

MAR 07 2016

Sleeve

Location

Loc Qty

Loc Code

ST305

15

m133363

1

m133790

4

m134134

10

2

DQA: _____ Date: _____



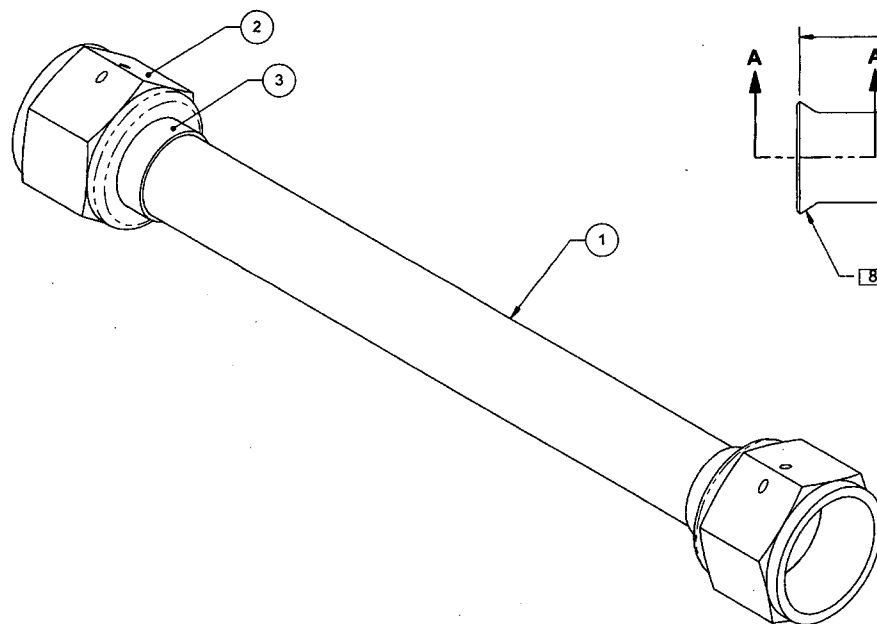
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

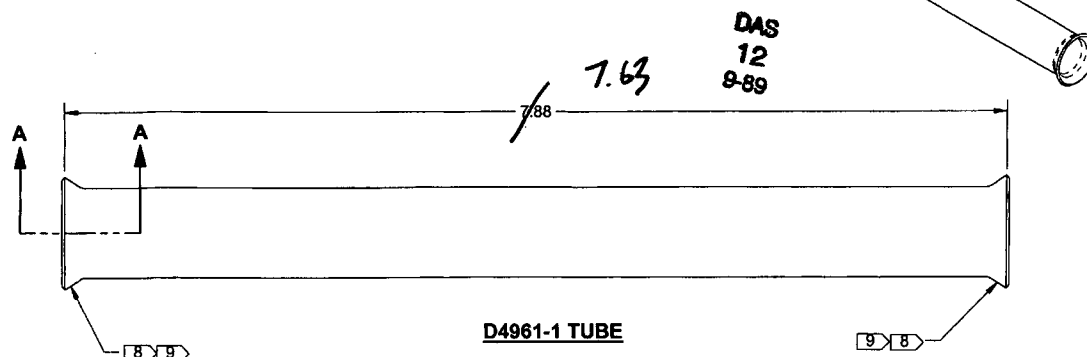
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

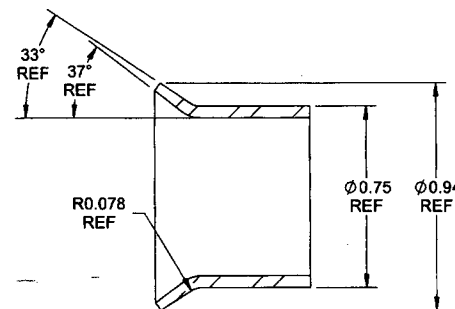
ITEM	QTY -041	P/N	DESCRIPTION
	X	D4961-041	TUBE ASSEMBLY
1	1	D4961-1	TUBE
2	2	AN818-L12J	NUT, TUBE COUPLING (DRILLED)
3	2	MS20819-12J	SLEEVE



D4961-041 TUBE ASSEMBLY



D4961-1 TUBE



SECTION A-A

RELEASED

2015 APR 30

ECN 15-527

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, $\phi 0.750 \times 0.049$ WALL PER ASTM A213 OR ASME SA213 OR ASTM A269 (REF DART SPEC M304TR)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.59 lbs
- 8) FLARE TUBE PER MS33584
- 9) CLEAN INSIDE OF TUBE AFTER FLARING ENDS

B	UPDATED BOM P/N AN818-L12J WAS AN818-L12J. ADDED SHEET 2 (D4961-043)	AK	14.11.07
A	NEW ISSUE	VS	13.10.21
REV.	DESCRIPTION	BY	DATE
DESIGN	VS		
DRAWN	AK		
CHECKED	RF		
MFG. APPR.	DD		
APPROVED	HS		
DE APPR.	DS		
DATE	14.11.07		

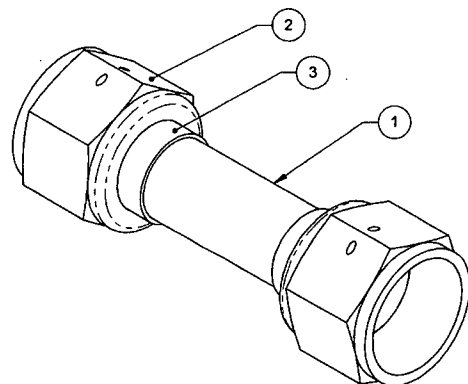
APPROVED

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

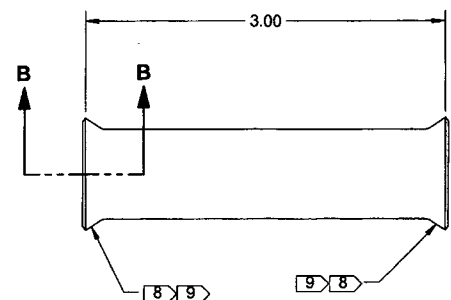
DRAWING NO. **D4961** REV. B
TITLE **TUBE ASSEMBLY** SCALE NTS

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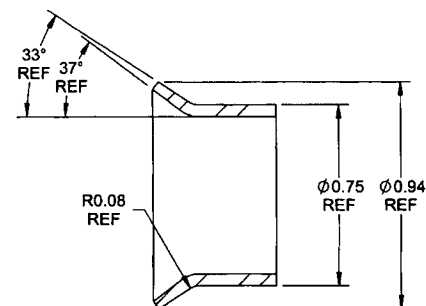
ITEM	QTY -043	P/N	DESCRIPTION
	X	D4961-043	TUBE ASSEMBLY
1	1	D4961-3	TUBE
2	2	AN818-L12J	NUT, TUBE COUPLING (DRILLED)
3	2	MS20819-12J	SLEEVE



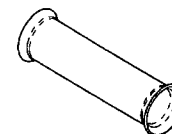
D4961-043 TUBE ASSEMBLY



D4961-3 TUBE



SECTION B-B



RELEASED

2015 APR 30

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, $\phi 0.750 \times 0.049$ WALL PER ASTM A213 OR ASME SA213 OR ASTM A269 (REF DART SPEC M304TR)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.44 lbs
- 8) FLARE TUBE PER MS33584
- 9) CLEAN INSIDE OF TUBE AFTER FLARING ENDS

APPROVED	DESIGN	VS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	AK		
	CHECKED	RF	DRAWING NO.	REV. B
	MFG. APPR.	DD	D4961	SHEET 2 OF 2
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	TUBE ASSEMBLY	NTS
	DATE	14.11.07	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

